

09/845,454

F0662/AMDP662US

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A system for monitoring and regulating an etch process, comprising:
 - at least one etching component that etches at least one portion of a wafer;
 - an etch component driving system that drives the at least one etching component;
 - a system that directs light onto one or more gratings located on at least one portion of the wafer;
 - an etch monitoring system that measures one or more etching parameters from light reflected from the one or more gratings; and
 - a processor operatively coupled to the etch monitoring system and the etch component driving system, the processor receives etching parameter data from the measuring system and analyzes the etching parameter data by comparing the etching parameter data to stored etching data to generate a feed-forward control data operative to control the at least one etching component, the processor further logically maps the wafer into one or more grid blocks and makes a determination of acceptability of etching values in the one or more grid blocks.
2. (Previously Presented) The system of claim 1, the etch monitoring system further comprises a scatterometry system that processes the light reflected from the one or more gratings.
3. (Previously Presented) The system of claim 2, the processor is operatively coupled to the scatterometry system, the processor analyzes data received from the scatterometry system and produces analyzed data, the processor controls, at least in part, the at least one

09/845,454

; F0662/AMDP662US

etching component *via* the etching component driving system based, at least in part, on the analyzed data.

4. (Previously Presented) The system of claim 3, the etch process is at least one of descum etching, photoresist trim etching, breakthrough anti-reflective coating etching and main etching.

5. (Previously Presented) The system of claim 3, the etch process is at least one of an isotropic etch process and an anisotropic etch process.

6. (Previously Presented) The system of claim 3, the etch process is a dry-etching process where the mechanism of etching has at least one of a physical basis, a chemical basis and a combination of physical and chemical bases.

7. (Previously Presented) The system of claim 6, the dry-etching technique with a mechanism of etching as a physical basis is at least one of a glow-discharge sputtering technique and an ion-milling technique.

8. (Previously Presented) The system of claim 6, the dry-etching technique with a mechanism of etching as a chemical basis is a plasma etching technique.

9. (Previously Presented) The system of claim 8, the dry-etching technique with a combination of bases is at least one of a reactive ion etching (RIE) technique and an ion-enhanced etching technique.

10. (Canceled).

11. (Previously Presented) The system of claim 1, the processor determines the existence of unacceptable etching values for at least a portion of the wafer based on comparing one or more measured etching values to one or more stored etching values.

09/845,454F0662/AMDP662US

12. (Previously Presented) The system of claim 11, the processor employs a non-linear training system in computing feed-forward control data operable to adjust the at least one etching component.

13-25. (Canceled).

26. (Previously Presented) The system of claim 1, the one or more etching parameters relate to at least one of size of a feature on the wafer, shape of a feature on the wafer, location of a feature on the wafer, a chemical property of a wafer, size of gratings, shape of gratings, location of gratings, size of space between features, shape of space between features, and location of space between features.

27. (Canceled).